ECONOMY OF ELECTRICITY.

WILL IT PAY TO CHANGE THE MOTIVE POWER ON EXISTING STEAM ROADS?

CONDITIONS THAT HAVE TO BE CONSIDERED—SUBURBAN TRAFFIC ALONE TAKEN INTO ACCOUNT.

If you talk confidentially with the chief engineer of almost any big steam railroad company nowadays you are apt to find him wonderfully well informed and rather enthusiastic about electric traction; but when he is questioned as to the chance of the new method of handling suburban traffic being adopted by his own road, he hesitates a little and replies: "Well, I can't say. It is for the president and directors to decide that point." Then when you go to see the executive officers they answer with reserve, evidently being in an uncertain, though anxious, state of mind on the subject. The demonstration by the New-York, New-Haven and Hartford Railroad Company of the entire feasibility of the substitution leaves little to be desired on that score. Hence, as The Tribune has already pointed out, the only question for the old companies to consider now is the economic one! Will it pay to make the change?

AN EXPERT'S DISCUSSION.

This matter is discussed intelligently and at considerable length in "The Engineering Magazine" for May by Charles Henry Davis. Following the example of other experts, he frankly says that for heavy and infrequent trains, making long runs, like passenger expresses and freights, electricity is out of the question as a motive power, at least at present. He confines his attention, therefore, only to that particular branch of the railroad business where ruinous competition has already been instituted by trolley roads. In this connection he observes: "Suburban traffic can be considered to lie within twenty miles of the centre of population; more often ten miles, and never exceeding thirty."

The first important principle enunciated by Mr. Davis is this: "It must be remembered that the gross receipts are often enormously increased by extraordinary expenditures, in which case large investments may be warranted. . . . If by using electric traction we can sufficiently increase the gross receipts per car or train mile and per mile of road, we can afford to pay for the additional first cost and greater total expenses. This is the vital question and the real one at issue, although usually not so considered."

The point is forcibly illustrated in this paragraph: "The Pennsylvania Railroad originally spent about five million dollars for its Broad-st. terminal; the great St. Louis bridge and Union station cost many more millions, while the Market-st. terminal of the Philadelphia and Reading Railroad, the Union station of the Boston and Maine Railroad systems, the southern Union station of the New-York, New-Haven and Hartford Railroad in Boston, and the Grand Central station in New-York are proofs of the millions of dollars spent by railway companies to locate their terminals at or near the centres of population. These expenditures were incurred almost entirely for the sake of increasing the suburban traffic, although giving a decided stimulus to through and competitive business. In my opinion, our steam railway companies can afford to double (to use a broad and inaccurate expression) these investments to accomplish what has been suggested above, reaping a handsome return from the increased gross receipts from the passenger traffic now handled by electric street railways."

CONDITIONS THAT BRING TRAFFIC.

The writer goes more into detail, to emphasize his idea, as follows: "By examining statistics of steam railways we find that the volume of travel is influenced by such features as the following: Convenient location of stations with respect to centres of population, length of line, proximity of terminals to the centres of population, number of trains (the four points just mentioned have an overwhelming effect on short-haul traffic); good roadbed and track neatly kept, handsome, commodious stations, with first-class appointments and service; comfortable and luxurious cars, block signals, cleanliness, and so on. Profit is proportional to success in obtaining that travel which enables each train to run full, for the cost of a train-mile is not affected by the number of seats taken, and it is this travel which is obtained by a line giving weight to its 'location' and 'appointments.' In freight competition between railways the rates are ultimately dependent upon the cost from 'consignor to consignee,' not from station to station, and the railroad eventually pays the additional cost of lighterage, switching and cartage, and the profit thereon, whether by actual difference in rates or loss of business. The same is true in passenger traffic, as will be seen by free omnibuses and reduction in rates.

"If you take the passenger up at his own door and set him down at his place of destination you have not only suited his convenience (and thus, as we shall see, induced him to travel oftener), but have secured those receipts which otherwise would have gone to omnibuses, hackmen and streetcar lines. This the steam railways have failed to do, and it is clear that they cannot altogether do away with these feeders natural to their peculiar modes and conditions of traffic; but there is little room to doubt that in many cases steam railways can modify their present methods for suburban traffic out of large centres of population and for interurban passenger traffic on branch lines between centres of population, by the use of electricity, paying the additional first cost and greater total expenses out of the probable (we might say certain) enormous increase in their gross receipts. This, I believe, can be accomplished only by a radical change in the present methods of operation, making them approach, on parts of the system, the present 'leave-at-your-door' plan of our street railways, while keeping on the rest of the system the present methods of steam railways, with possibly some minor modifications."

It is granted, what the reader would imply from the general tenor of the foregoing argument, that the first cost and total expense will be greater with electricity than with steam; but there are cases in which the difference would probably be more than made up. Mr. Davis here makes some comparisons between the traffic of electric and steam roads in New-England. His tables of figures may be omitted, as being somewhat defective and obscure, but his conclusions are not only interesting but seem to be sound:

WHEN IT WILL PAY TO CHANGE.

"The characteristics brought out by these figures are the enormous number of passengers per mile, the large receipts per mile of road, and per car mile, and the greater total number carried, on electric roads. The steam road gets greater receipts per trip, but carries each passenger a longer distance, and has to run a disheartening number of cars or train miles for the passengers carried. The difference is due to the short trips, high fare per passenger and car mile, and the 'leave-at-your-door' service, of electric roads. As our argument is confined, for reasons stated, to suburban and interurban short hauls, we think it plain from what goes before that the adoption of electricity as a mode of operation, with the additional change to the prevailing methods of our present street railways giving nearly the same class of service (combined or not with steam locomotives as the case may require), will result to steam roads in an enormous increase of the total passengers carried, passengers per car mile and rate received per mile, and will shorten the distance each passenger is hauled; and, by thus increasing the gross receipts, will more than pay for the additional investment. If this cannot be done in any given case, then it will not pay to make the change."

Mr. Davis thinks it probable that electricity could be profitably substituted for steam on six suburban routes leading out of Philadelphia: To Wilmington, on the Baltimore and Washington branch; to Paoli, on the main line; to Germantown and Chestnut Hill, to Norristown, to Tacony, and to West Chester. One power station might supply them all with current. The bridge over the Schuylkill into the Broad-st. station should be widened, he thinks, so as to carry four more tracks; and each of the routes should have one or more extra tracks.

He suggests that the same general treatment of terminal facilities should be studied in the following cases: The New-Haven lines out of Boston, the Boston and Maine lines from the same city, the Philadelphia and Reading out of Philadelphia, the New-York Central, Harlem and New-Haven lines out of New-York, the Central Railroad of New-Jersey out of Jersey City, and the Illinois Central out of Chicago.

IMPROVEMENTS THAT SHOULD BE MADE.

The additional tracks, Mr. Davis believes, "should be extended as travel required; right of way should be prepared, so that passengers could leave or enter these cars at any point along the line. Local stations should be provided, in some cases much closer than at present, at which passengers on streetcars could change to electric-cars stopping only at said stations, or to express electric trains stopping at fewer points, all being done by the payment of a single fare. It will be seen that this is a combination of the street railway on the outside tracks with the local and express service of a steam road on the inside tracks, while the through locomotives operate on the middle tracks. The proposition is a radical one, is advanced as such, and will bear close investigation and study.

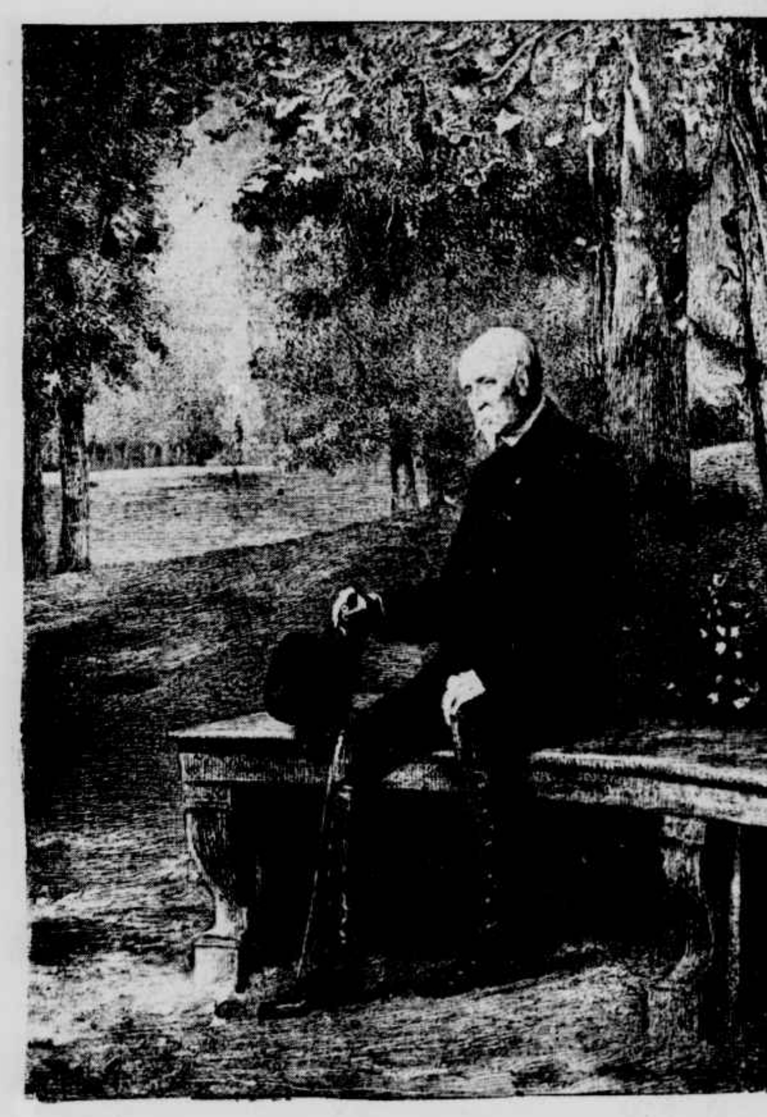
"Should an existing line make the change, the item of loss from discarding old equipment must be taken into consideration; otherwise the problem remains the same. In many cases such equipment can be used on other parts of the system. Steam-railway managers should avoid making the mistake which took place in the change from horse traction to electric traction—namely, of trying to reduce the first cost of changing by the use of old methods, material and equipment, which, although entirely suited to the old system, proved most unsatisfactory under the new conditions. The old equipment partly made over will not do. There must be new trucks and new and lighter car bodies, hung lower for greater ease of entrance and departure. Old methods of operation must be discarded, and new ones substituted. A change of system may necessitate additional tracks, which should be provided even at large cost. The nearer the approach to the 'leave-at-your-door' service the greater the success."

THE CHIVALROUS DUC D'AUMALE.

NONE OF THE FRENCH ROYAL FAMILY'S FAILINGS INHERITED BY HIM.

The late Duc d'Aumale was the gentleman par excellence of the French royal family, and alone of the descendants of Philippe Egalité, the regicide and revolutionary Duc d'Orléans, had inherited none of the family failings. He was neither an unscrupulous hypocrite like his father, King Louis Philippe, nor sordidly avaricious like his brother, the late Duc de Nemours, nor yet a lying and ungrateful intriguer like his other brother, the Prince de Montpensier. He differed, too, from his sailor brother, the Prince de Joinville, who has excited no end of ill-will by his discourtesy and ingratitude, as well as by the discreditable manner in which he assailed his father in his memoirs. He has been equally careful to abstain from embarking in the shady money transactions and speculations of the Duc de Chartres, and kept his skirts clear of such insane political adventures as that of the Count de Paris when he associated himself with Boulanger.

The Duc d'Aumale was always extremely generous and "grand seigneur" in everything that he said and did. There was not an atom of meanness about him, and he was so chivalrous, so high-spirited and so high-minded in every way that it is easy to understand why the French should have been in the habit of describing him as "our Prince," very much in the same way as the English designate the Prince of Wales.



THE DUC D'AUMALE.
(From a portrait by Benjamin Constant.)

KING CHRISTIAN IX.

ONE OF THE MOST POPULAR OF THE EUROPEAN CROWNED HEADS.

From Chambers's Journal.

Among the many crowned Kings of Europe there is none more popular than King Christian of Denmark. Since the wedding bells at Buckingham Palace in July last, Denmark and its ruling family have again become most interesting to the millions of Britons, who are never tired of singing the praises of their much-loved Princess of Wales. It was natural that the English nation should look favorably on the suit of young Prince Charles, and wish him well when he won the heart and hand of Princess Maud. This, however, is a sketch of King Christian of Denmark, the grandfather of Prince Charles. We have said that there is no European King more popular, but the reason of this popularity, both at home and abroad, is not so easy to explain. Perhaps it is because no one suspects him of sinister motives, nor of inscrutable schemes against the peace of Europe.

Another may be that every one knows his aversion to publicity. He never appears at public fêtes unless it is a case of noblesse oblige; never makes a speech unless compelled; never publishes verses like his genial neighbor, King Oscar of Sweden, nor composes tunes and dramas like the versatile Kaiser William. Indeed, it is doubtful if he ever kept a diary. King Christian, like a good divinity, does as he is bidden, and in this way has won the affections of his Ministers and his people. It is this retiring country-squire disposition which has preserved the smallest sovereign of Europe (so far as real dominion goes) from many an intrigue or open revolt which a bolder ruler might have had to face, and has so endeared him to the bulk of the Danish people, especially the landowners. King Christian is nothing if not a husbandman, although he lives in a large capital and seaport, Copenhagen. The home land of Denmark, would, in Western America, pass for a good-sized ranch, as it means only 14,000 square miles, but the other lands belonging to Denmark—Greenland, Iceland and the West Indies—are rented to official tenants. By this simple plan and with strict economy, King Christian manages to keep his family in comfortable style even for royal blood.

THE ROYAL FAMILY'S SUMMER HOME.

The summer residence of the royal family is Amalienborg, a very pretty quadrangle in North Copenhagen, not far from the new free harbor, and quite close to the general barracks. His other chief residence, Frederiksborgslot (built by Frederik IV, the merry monarch), is a small but beautiful edifice in West Copenhagen, surrounded by enchanting parks and gardens and commanding an excellent view of the city and its surroundings. The old royal palace, the famous Christiansborgslot, once one of the grandest palaces in Europe, is situated in East Copenhagen, close to the Thorwaldsen Museum, but is now almost in ruins, as a few years ago a terrific fire destroyed all its beauties, leaving the rock walls bare, like a deserted wreck on the strand. That the castle has not been restored is not because of any stinginess on the King's part, but from lack of means, for, considering his numerous family, the King is really poor. As for the Danish people, the enormous expense incurred in fortifying Copenhagen in order to prevent its falling into the clutches of another Nelson or a second Moltke in a possible war, has drained them so that they have been quite unable to be generous to their monarch. And the monarch himself has been so exacting about making those fortifications that at times the long-suffering patience of his people has almost been worn out under the pressure of grievous taxation. On such occasions the King or his agent has merely reminded them of 1866, and the loss of Schleswig Holstein, whose population was largely Danish; and threats of Socialism have yielded to patriotism for Denmark. Such is the domestic policy of King Christian. The capital of his kingdom he has had the pleasure to beautify greatly; but in this he has only carried out the plans of more ambitious predecessors, and in everything has merely obeyed the native simplicity of taste. This simplicity permeates his every act from the highest royal function of asserting his supreme will to the most ordinary performance of every-day life, and it is this which has insured him that greatness not always vouchsafed to a king, the love of the common people, from the rich fields of Denmark to the frozen shores of Greenland.

POPULAR WITH THE MASSES.

It is by no means a rare event for His Majesty to drive through the principal streets of the ocean-bordered boulevards of his beautiful capital, the Venice of the north, in an open carriage, with scarce any suite. On such occasions, the populace, though numbering a large percentage of Socialists and radicals, show their affectionate regard for the aged sovereign as truly as if he were a laurel-crowned Cæsar returning from victory. Indeed, he is a true conqueror, for being of foreign lineage, a German by descent, he has gained the goodwill of the Danish people to the last degree.

In the matter of making speeches, King Christian of Denmark and King Oscar of Sweden occupy the two extremes; the one a matter-of-fact man, of few words and apparently of few ideas; the other a poet born and an orator of marked eloquence and power. Thus, while King Oscar does not shrink from reciting his own poem at a public meeting, King Christian will prefer to talk about the weather or the last passing event. "We have had a fine season and a bounteous harvest; let us give thanks to Providence," is the Swedish report of one of King Christian's speeches. Of course, allowance must be made for press condensation. But in spite of his unimposing speech, he is a welcome guest both in Norway and Sweden, and his never-failing farmer's shrewdness quite makes up for his want of eloquence.

In no instance recorded has the homely beauty of this nobleman's character, whose fortune, or misfortune, it has been to be born to royal honors, been brought into bolder relief than on his visit to his distant and somewhat recalcitrant subjects in Iceland. The occasion was the millennial festival of the island in 1874, and the King, profiting by improved facilities of ocean travel, honored these proverbially litigious and at that time actually rebellious tenants of his snow farm, by going to Reykajvik, and thus earned the fame of being the first crowned King to set foot on the land of the Eddas. There, too, among the lavas and glaciers, King Christian won a signal victory, greater than the exploiting tactics of monopolists, or the subtilities of jurists, and greater than that won by force of arms; for the little nation of Iceland has never been conquered in war. King Christian won the victory in his usual style. Clad in civilian costume, he entered the capital of Reykajvik, a port of 2,000 inhabitants. He was met by His Grace, the Bishop of the island, and His Excellency, the Governor, both in official dress, and by them escorted up the principal street of the village. From there he proceeded, riding on a half-wild Iceland pony, to the historic plain of Thingveilir, and was present at the national gathering on the very site of the ancient Althing, the famous tribune of the ancient Icelandic republic; and there listened to some high-pitched oratory in the language of the brave old Norsemen, an oratory he must have envied.

A LIVE SOVEREIGN IN ICELAND.

Just imagine a real live sovereign standing in the midst of Icelandic peasants and fishermen, a rough-visaged crowd, good-natured enough just now, but still of such temper as might, under pressure, Hecla-like, remind one of former days; and to run this risk without any other bodyguard than a few peacable Danes and a sprinkling of gold-braided sheriffs. Yes, on the very spot where so many tribunes of the old commonwealth had been held, where the booths still could be seen, where the ravines still guarded and the volcanic hills still pointed to the mighty untraversed glaciers His Danish Majesty showed himself at his best. Profiting by seeing the singular and self-willed Icelander at home, the people whose complaints and demands he had listened to more or less unwillingly ever since his ascent of the throne, the King thought it would probably gladden the inhabitants of Snowland if he satisfied some of their most ardent prayers, and the most acceptable thing he could think of was to grant them a measure of self-government. Producing a document to that effect when the festivities were at their height, and the grass-green plain covered with thousands, the sober-minded King, in the presence of his officials and the assembled multitude, handed the documents granting Iceland home rule to the veteran champion of Iceland, Jon Sigurdsson, a man of superior ability in whom the King recognized the spokesman and leader of the people, and who accepted this material concession with unfeigned pleasure. It was the fruit of his life work. The people, peasants and fishermen as they are, could not but feel what they once were, yet gladly accepted the new constitution, and honored the King for his kindness. The loyalty which then animated the people, at least the upper and middle classes (if such classification be permissible in Iceland), may be gleaned from the following stanza of Jochumsen's "Greeting to King Christian," sung in the King's presence at Lögberg.

> With firm foot tread the holy ground,
> Our Snowland's King, the noble-hearted,
> Who from thy royal home hast parted
> To greet these hills that guard thee round;
> Our Freedom's scroll thy hand hath lent us,
> The first crowned King whom God hath sent us,
> Hail! Welcome to our country's heart.

And so these descendants of the sea kings and Vikings, most of them for the first and only time in their lives, lifted their head covering to a King, and made the republican plain and the grim ravines ring with their cheers, a most remarkable display of feeling for Icelanders. Then the band struck up the new national air—an imitation of an Edda rhyme, composed for the occasion by one of their scalds:

> By the stream Oxar,
> By the Thingvalla,
> Unfurl our free banner,
> White falcon on blue;
> New era of freedom,
> Now dawns on our nation;
> Our lives do we pledge her,
> Forever true.

The populace caught up the music; and the King's suite and the King himself were so touched and electrified by the surroundings that they joined in the singing; at least, so the story goes. But this much is certain, that every person present that day felt immensely more satisfied with the world in general, and with King Christian in particular, for his quiet, plain and kindly demeanor toward them.

THE BOY KNEW.

But the most characteristic anecdote told of King Christian during his stay in Iceland is of the homeliest description. His Majesty would often saunter beyond the outskirts of the capital, apparently to obtain a fuller view of the varied landscape—mountains, valleys, glaciers, islands—and would, for minutes together, stand on some eminence where perhaps a group of old-fashioned huts, such as travellers love to sketch, were huddled together. Into one of these, the most dilapidated of the lot, the King on one of these occasions entered, and in so doing he must have doffed his hat and walked more bent than is his wont, for the passage of an Iceland hut will not yield much to a fox-hole in length and breadth—a device, of course, to keep out the frost. The King did get in, however, and finding there a little boy building what he called a house of sheeps' bones, the King asked if he might have the house. "No," said the boy; "it is mine own." The King, thinking the boy was remarkably deficient in intelligence, pulled out a coin and asked him whose head was stamped on the coin. "Looks much like you, man," said the youngster without a moment's hesitation, and the King seeing that his intelligence was quite equal to his independence, patted the boy on the head and gave him the coin. This story had travelled over the island even before the news of the home-rule presentation. The fact was, the people accepted his home-rule presentation as a part payment of their claims, but his kindness as his own.

Thus it is that King Christian holds his place as a sovereign, not because of exceptional ability, nor even by right of inheritance, but by the power of kindness. He is kindness incarnate, and this is his most formidable weapon against social democracy.

AN INTERESTING CONVERSATION.

From Answers.

Sir A. Sullivan went to see Rubinstein at his hotel in London. The Russian composer asked him to step out on the balcony and smoke a cigarette.

They sat down, twisted their cigarettes, and puffed the blue clouds into the air. After a long pause Sir A. Sullivan observed:

"You are a great admirer of Beethoven, I presume?"

"Yes," said Rubinstein.

"And Wagner?"

"No," was the reply.

Not another word was spoken. They rocked themselves in their chairs and smoked away. After a very long time Sullivan said:

"I think it is time for me to be going."

"Don't say so," said Rubinstein. "Stay a bit longer. It is so nice to talk to you."

Sullivan stayed, and went on rocking himself into the small hours of the morning, when he got up and said:

"I must be off now; I think we have chatted long enough."

Rubinstein drew out his watch.

"Half-past two," he said. "Strange how quick time flies in pleasant company!"

A QUEER FRIENDSHIP.

From The Field.

While visiting in Herefordshire last week I noticed a curious instance of a wild duck having become on friendly terms with a pair of wood pigeons. As I had never heard of such a thing before, I venture to send you an account of the circumstances. A pair of domesticated wild ducks were brought up on a pond last year, and during the winter the duck was accidentally shot by some one. The mallard remained on the pond, but seemed very unhappy, and used to fly around repeatedly, as if looking for his mate. Some two months ago the mallard was frequently seen to be flying around in company with one or two wood pigeons, and would accompany them to the surrounding fields and walk about with them while they fed. Every now and then it would take a flight with them when they rose.

The wood pigeons have established themselves in an oak tree overhanging the pond, and are evidently going to nest there. They have been seen to start off on a flight from the tree, and the mallard would at once rise from the pond and join them, when they would fly round and chase one another as if in play. The wood pigeons frequently visit the garden close by, and have lately been observed feeding on some green peas which are growing there. The mallard walks about the garden with them. At the bottom of the garden is a stone wall about three feet high, with a broad, flat top, and the wood pigeons frequently fly from the garden and perch on the wall; the mallard has been seen to do the same, waddling about on the wall and seeming on the best possible terms with them.

ELEPHANT CUTLETS FOR DINNER.

From Answers.

The greatest luxury at dinner in Central Africa is elephant steaks. Any big native feast without elephant's flesh is as rare as an English society dinner without venison.

In dressing the carcass of an elephant the rough outer skin is first removed in large sheets. Beneath this is a sub-cuticle—a pliable membrane, from which the natives make water-skins. The rib bones are cut out and stewed, but all the other bones are destroyed.

The most delicate part, very strangely, is the first joint of the leg below the knee, which one would suppose to be the toughest portion of the animal. This joint is cooked by being buried in a hole in the ground, a huge fire over the top supplying the heat.

THE BICYCLE SOMBRERO.

From The Chicago Record.

There's another ill to be charged to the bicycle in Chicago. It is the broad, white, leather-belted, leather-bound sombrero, which on the few fine days of spring has seemed to dot the variegated millinery of State-st. with suggestions of cowboys in petticoats. It has been too early in the wheeling season to class the startling headgear, but assurance is given by milliners that neither revolvers, lariats nor bucking broncos go with it; that as soon as roads are smooth and dry it will associate itself with pneumatic tires and short skirts.

The venturesome few who have appeared in downtown streets under the shadow of these fluttering brims of white felt have had clear pathways made for them in the crowds.

It has all come about because of the inability of some genius to perfect a small, comely bicycle cap which will prevent freckles and sunburn. There are golf caps, jockey caps, yachting caps, tennis caps and kindred headgear for wheelwomen, but until now there has not been a bicycle hat. And such a hat!

It is less evanescent than the airship, but its origin is about as obscure. The manager of a big millinery house in State-st. introduced them to the Chicago public.

"One warm Sunday in February I saw a woman wearing one and wheeling through Jackson Park," he said. "It was a rakish, catchy thing, with the brim teetering in the wind, and we ordered something of the kind from an Eastern manufacturer. We liked the effect, ordered a good stock, and I understand that they are stopping clocks all over town."

There is no sham in the make-up of this breezy, flopping hat. It is of felt, bound with genuine oak-tanned leather and buckled about with a strap that would hold a bulldog from the trousers of a tramp.

"Straw wouldn't do as a bicycle hat," explains the hat man; "the wind would wreck an old-fashioned leghorn straw before the first windy mile was made. These sombreros tilt gracefully, letting the wind slip by, and they 'stick' better."

A BUCOLIC INCIDENT.
"WHEREABOUTS ARE THE BUTTERFLY-HIVES?"
"NEVER HEARD OF 'EM."
"BUT WHERE DO YOU GET YOUR BUTTER FROM?"
—(Sketch.

A MEMORIAL TO CABOT.

THE 400TH ANNIVERSARY OF THE DISCOVERY OF THE NORTH AMERICAN CONTINENT TO BE CELEBRATED.

The present year is the 400th anniversary of the discovery of the North American Continent, and the citizens of Bristol, England, have resolved to commemorate this great event by the erection of a memorial to John Cabot and his colleagues. This monument will take the form of an ornate tower, designed by W. V. Gough, and will be placed on the summit of Brandon Hill, which has been designated "the finest interurban hill in England." The site is in the heart of the city, and the conical hill,

THE PROPOSED CABOT TOWER AT BRISTOL.

twenty-five acres in extent, overlooks the upper reaches of the port from which, in May, 1497, the Matthew sailed on her adventurous, successful and epoch-making voyage. The Bristol Town Council has granted the Cabot Committee, which includes many of the leading citizens, the site on which the monument is to be erected, and the movement is under the presidency of the Marquis of Dufferin. The foundation-stone is to be laid on June 24—the 400th anniversary of the day on which the mainland of North America was first seen by a European navigator. The committee, before making a public appeal, had received donations amounting to £2,000 toward the £5,000 which it is proposed to expend on the memorial. It is confidently anticipated that Bristolians in all parts of the world will send contributions in honor of their native city, and that patriotic Englishmen generally will give cordial support to the proposal to erect a permanent memorial of an achievement of international interest. Contributions may be sent to the honorary secretaries, Cabot Celebration Committee, Quay-st., Bristol.

RELIGIOUS DRAMAS IN PARIS.

HOW HOLY WEEK IS OBSERVED IN THE FRENCH CAPITAL.

Paris correspondence of The Providence Journal.

The billboards of Paris during the last week have been covered with an array of placards more closely resembling Sunday-school lesson charts than theatrical posters, and the aspect of the advertising kiosks must have amazed a stranger passing through the capital. Instead of "Snob," "Charley's Aunt," "Monsieur Lohengrin" and "Colonel Roquebrune," one has read "The Child Jesus" Mystery in five acts at the Ambigu; "The Passion," a drama in five acts, at the Porte-St.-Martin; "The Redemption," a drama in five acts, at the Théâtre Corneille; "The Stations of the Cross," with music and living pictures, at the Bodinière; "Joseph of Arimathia," read by M. Coquelin, the elder, on the same stage; "The Mother of Judas," presented by the Society of the Rosy Cross, and "The Samaritan Woman," given by Sarah Bernhardt at the Renaissance. Nowhere outside of France would one find Holy Week observed in such a way. The mere idea seems a sacrilege to the English or American mind, but the Parisian is made of different stuff. Religion represents for him a consolation, not a restraint, and at all costs he must have diversion—Sunday laws would drive him to instant revolt, and a Theodore Roosevelt would be stoned in the streets.

The only way, in fact, to make him a peaceful citizen is to furnish him constant amusement, and this is the secret of the part assumed by the Government in organizing public festivals. The Church is also forced to take account of this same national characteristic. Otherwise it would soon lose its influence, for the Frenchman's bump of reverence is notably small; nevertheless he still retains a certain respect for the traditions of his faith and is glad to reconcile his pleasures with his conscience, if possible. For that once he attends mass, however, he goes to the play at least twice, and, unwilling to change his habits even in Holy Week, he calls upon the theatrical managers to change their bills. Hence the growing demand for "mysteries" or evangelical dramas, and the ready supply furnished by the new generation of writers. The first attempt was made some years ago by the Théâtre Libre, or Free Theatre, a dramatic association formed for the purpose of presenting works refused by the regular companies, not because of their lack of literary merit, but because of their breadth of thought. At that time Villiers de L'Isle-Adam, in an article bearing the unseemly title, "Our Lord on the Boards," wrote: "An entire group of young authors, having remarked that, quite apart from all question of talent, the mere subject, on this occasion, fixed the attention of the critics and stirred up a general controversy, have in their turn set to work, and promise to deluge our theatres with melo-evangelical fantasies, in which our Lord will figure as one of the leading characters."

His prophecy has been fulfilled to the letter, and to-day, instead of adaptions from Shakespeare or Calderon, we have adaptations from the Bible. Never, however, have so many of them found a public hearing as this season, and the more pious are beginning to grow anxious as to the possible influence of such an innovation on the people. They argue, and with justice, that when the Virgin Mary, St. Joseph and even the Lord Himself, descending from their altars, appear before the footlights under the guise of well-known actors and actresses—inevitably associated in our minds with worldly and often ignoble parts—the result cannot be elevating. I myself fostered grave misgivings as I took my place in the Renaissance on Wednesday evening to assist at the first performance of "The Samaritan Woman." To hold in my hand a programme headed in glaring letters:

"Sarah Bernhardt—Photine,"

and in smaller type below:

"M. Bremont—Jesus."

to realize that I was going to see La Tosca transformed into the woman at the well, and Mario into the Christ, outraged my sense of decency. Scarcely had the first lines of Mr. Rostand's beautiful poem been spoken, however, before all my scruples vanished. Rarely, indeed, have I heard a Biblical story more exquisitely told, and I am sure that in the entire audience there was no sceptic so hardened that he did not feel a thrill of religious exaltation as he listened to the uplifting story. M. Rostand, appreciating the enormous difficulty of representing worthily the close of the sacred drama, preferred to take as his theme an event in the earlier period of Christ's mission, before the dark forebodings of the final tragedy had cast their shadows about Him.

THE "ROPE CURE" FOR GRASSHOPPERS.

From The Chicago Times-Herald.

The intelligence of scent of the red-legged grasshopper enables it to select its food while on the wing in the air, where by some process of signalling known only to itself it gathers a great army of its kind to descend with massed force on the field beneath when a forty-five acre field of corn will only afford them a single meal.

Last year the grasshopper reports sent to the University of Nebraska at Lincoln caused apprehension of an invasion this year, as great quantities of eggs had been deposited in the soil over a large area of country, and those eggs are expected to furnish an army of active "locusts," as they are technically named.

Farmers call them "hoppers," but the college entomologist talks knowingly of "M. Atlantis," "Packardi" and "Camnula Pellucida."

In Utah they have what they call a "rope cure" for the pest, and every man, woman and child takes part in the performance. It consists of drawing ropes, held taut by persons at each end, across the back, over the fields of grain, so that Mr. Grasshopper shall not find any room for the sole of his foot, and they keep this seesaw up until he is starved out.

No doubt the agricultural college will find a way to meet another visitation with some exterminating process when the migratory locust will migrate to a clime where he will disturb no more, whither forbears of his ilk have gone.

THE IRONY OF NAMES.

From The Chicago Record.

"They do strange things in Indiana."

"What, for instance?"

"Well, at Indianapolis 'Knickerbocker Hall' is a girls' school and 'Bloomer Academy' is a college for boys."

A NEW DISINFECTANT.

THE VALUE OF FORMALDEHYDE AND HOW IT IS USED.

DR. DOTY'S EXPERIMENTS AT QUARANTINE—THE "FORMALIN CHAMBER"—RESULTS OF THE TRIAL IN PORTLAND.

In scientific and public health circles in this country, as well as in France, Russia and Italy, considerable attention has been aroused during the last few months in a new process of disinfection which is acknowledged to have great possibilities in it. The world in general has heard little of it, for the reason that the experiments have been buried in a mass of chemical technicalities, and because the practical value of the discovery has seemed uncertain until just lately. The new disinfectant is a gas known as formaldehyde, or formic aldehyde, and, when in solution, formalin. It is produced by burning methyl or wood alcohol in a peculiar manner, and this much is already assured, that it is a germicide of great power and efficiency.

The only question now in the minds of the doctors and chemists who have been experimenting with it for some time is just how well it will penetrate. So far it has not been proved that it will disinfect tightly tied-up bundles of clothing (which can be accomplished by steam perfectly and in a short time), and the experiments in this direction have been rather discouraging. But though the new gas does not seem to penetrate, it is marvellously certain when goods and fabrics are spread out and exposed to its vapors, and for "house-to-house disinfection" (the scientific cleansing of infected rooms, drapery and furniture) it is a complete success.

FORMALDEHYDE AT QUARANTINE.

Not only have practical tests been made of it in several of the largest cities in this country, but a number of health officials have put the new system into actual use and have built "formalin chambers" in conjunction with their steam disinfecting plants. Such a "chamber" was installed several weeks ago on the New-York quarantine boat by Dr. Doty, and many articles pass through it weekly. While Dr. Doty does not think it can take the place of steam, he believes it to be a valuable adjunct to any disinfecting plant, for the reason that it leaves the finest fabrics uninjured. Steam and sulphur destroy colors and surfaces, and until formaldehyde gas was discovered there was nothing known to science that would kill every germ and still leave valuable articles untouched by chemical action.

In his office down at Quarantine Dr. Doty has a curious and interesting proof of this in the shape of three large scrap books, which have fabrics of silk, delicately tinted muslins and other stuffs, samples of upholstery, draperies, furs, leather and elaborate wall papers, arranged in three parallel columns to a page. The first column shows the goods before they have been submitted to any disinfection whatever; the second the same goods treated with formaldehyde gas, the third as treated with sulphur. In every instance the samples disinfected with formaldehyde gas have retained their original delicacy of tint and surfaces. Those treated with sulphur are, in many cases, completely destroyed. The gold in wall papers has been faded, and the colors of intricate patterns have run into each other. Literally hundreds of experiments have been recorded in these books, and in every case formaldehyde gas has stood the tests.

Dr. Herman M. Biggs, bacteriologist of the Health Board of this city, has just had a "formalin chamber" built in the steam disinfecting bureau, in East Sixteenth-st., and expects much from it. Owing to imperfect mechanical conditions, however, this plant is not yet in good working order, and no definite results have so far been obtained. It is regarded, nevertheless, as a valuable addition to the steam chambers, and practical work will be done on it this summer. The Boston Board of Health, under Dr. Durgin, has been doing "house-to-house disinfection" lately with the new gas, and has met with pleasing success. In Maine Professor F. C. Robinson, the chemist in Bowdoin College, who has invented a "generator" for producing the gas, has met with great success in his experiments. For the State Board of Health of Maine he disinfected a house in Portland with this result.

AN EXPERIMENT SUCCESSFUL.

"The rooms were all taken separately in this way," he says in his report, "throughout the house (a Portland mansion where there had been three cases of diphtheria, one fatal), one floor at a time beginning with the basement. The generators were then placed in the halls, all the room doors being closed. The mattresses were left for the most part upon the beds. The closets and bureau drawers were opened, and the bric-à-brac, books and other things were left as they were, with a good chance for the gas to circulate about them. It took about twelve hours to go over the whole house, and nine gallons of alcohol were used, or about one quart to every 2,000 cubic feet of space. Threads infected with diphtheria cultures were placed around in different parts of the worst rooms between sterilized blotters. Of the twelve cultures made from these every one was sterile."

Abroad even more has been done with formaldehyde gas than here. Paris has officially adopted it as a disinfectant, as has also the municipality of Marseilles. The Italian Government is showing much interest in it, and the Russian Government recently ordered from Trillat, who is really the father of formaldehyde gas, several thousand of his little "lamps," or "generators."

DIFFERENT FORMS OF GENERATORS.

Already four or five different "generators" have been devised. The most curious and practical is a "lamp" that can stand outside the room to be disinfected, and therefore can be properly regulated and watched. This has a thin pipe running from the cylinder, where the gas is produced from the alcohol, which is intended to pass through the keyhole of a door. In all the lamps, however, the gas is made in much the same way. Wood alcohol is allowed to flow little by little into the bottom of the cylinder of the generator. A few inches above this pan there is a sheet of platinized asbestos, perforated with many small holes. The alcohol is ignited, and in a few moments the asbestos is at a white heat. Then the flame is blown out. The asbestos and the alcohol, both at a high degree of heat, continue to act upon each other, and a vapor results which is allowed to escape through holes in the top of the cylinder in some "generators," carried away in others through a small pipe. Where there is a "formalin chamber" for portable goods the pipe leads directly into this. For fine fabrics and for house disinfection the efficacy of this gas has been established. Dr. Doty thinks it will also be of great value in disinfecting mails from infected ports. He has had his best results in mixing "formalin" with chloride of calcium. It is quite possible that other chemical compounds will be discovered that will give formaldehyde an even greater value than it seems to possess to-day.

MEDICAL EFFECTS OF ELECTRICITY.

From The Electrical World.

In a recent communication to the Société Internationale des Electriciens concerning the therapeutic and physiological effects of high-frequency currents, M. d'Arsonval showed the powerful inductive effects which can be obtained with these currents. A striking experiment consists of placing three lamps in tension, allowing the current to pass through the body. These currents cause no sensations, and a man placed in a circuit does not feel that he is traversed by the currents which brilliantly illuminate the lamps. The principal results of this electrification are an augmentation of the oxidations in the organism and an increase in the production of heat. A subject who, under ordinary conditions, eliminates 17 to 21 litres of carbonic acid per hour throws off 37 litres after having been submitted to this action. High-frequency currents do not act solely upon the surface of the body, but also profoundly upon the interior. All of these results have been obtained upon a number of subjects by MM. Apostoli and Charrin.

M. d'Arsonval cited, in closing, the action exercised upon microbes and bacteria by these currents. The microbes and bacilli are modified, and the toxines are killed and transformed to vaccine. MM. d'Arsonval and Charrin hope by this method to arrive at a direct treatment for the interior of the bodies of patients suffering with zymotic disease, and experiments to this end have begun.

HOW HE FOUND THE CONGRESSMAN.

From The Washington Post.

A Chicago man, by-the-way, came down here two weeks or so ago to signify to the powers that be his patriotic willingness to accept the burden of a public office. He fell in with another man on the train who also was on his way to Washington, and the two struck up a smoking-room acquaintance. The Chicago man was armed with a letter to Congressman Belknap, of Illinois, from "Biff" Hall, an important letter which he was anxious to present. As soon as he arrived in Washington he went to the Capitol. Congressman Belknap was absent. He went again. The Congressman was busy. He went several times, but failed to see the Congressman, though several times he met and bowed to his acquaintance of the smoking-room. Finally the two shook hands.

"Who are you looking for?" asked the stranger.

"Why, I want to see Representative Belknap," said the Chicago man. "I've got a letter from 'Biff' Hall."

"From 'Biff' Hall!" exclaimed the stranger. "Why didn't you say so? I'm Belknap."

"The deuce you are!" said the Chicago man, and they adjourned to the basement to make up for lost time.

IN BAD COMPANY.

Washington correspondence of The Chicago Record.

A Democratic member of the House has received a letter from an active politician of that party in his district calling attention to the fact that he is almost reported in "The Congressional Record" almost every day as being "paired" with a Republican. "I don't doubt your loyalty to the party," reads the letter, "but I think the boys would like it a good deal better if you paired with Democrats instead of Republicans."